

We claim:

- 1.** An apparatus comprising:
pseudo skin; and
a palpation module, wherein said palpation module is disposed beneath said pseudo skin, and wherein said palpation module enables a user to palpate a pseudo vein.
- 2.** The apparatus of claim 1 wherein said palpation module measures a change in position of said pseudo vein.
- 3.** The apparatus of claim 1 wherein said palpation module is operable to vary a simulated stiffness of said pseudo vein.
- 4.** The apparatus of claim 1 wherein said palpation module comprises said pseudo vein.
- 5.** The apparatus of claim 4 wherein said pseudo vein yields to applied palpation pressure, such that it moves downward.
- 6.** The apparatus of claim 4 wherein said pseudo vein comprises a rigid member.
- 7.** The apparatus of claim 6 wherein said palpation module is operable to vary a simulated stiffness of said pseudo vein.
- 8.** The apparatus of claim 4 wherein said pseudo vein can be felt, but is not visually discernable, beneath said pseudo skin.
- 9.** The apparatus of claim 4 wherein said palpation module controllably obscures said pseudo vein under said pseudo skin such that said pseudo vein can be felt, or not felt, as desired.

- 10.** The apparatus of claim 4 wherein, when said user applies a sufficient amount of force to said pseudo vein, it cannot be felt.
- 11.** The apparatus of claim 1 wherein said palpation module generates a force that opposes downward motion of said pseudo vein.
- 12.** The apparatus of claim 11 wherein a magnitude of said force is substantially constant during application of said force.
- 13.** The apparatus of claim 12 wherein said magnitude of said force can be varied, but is constant during application.
- 14.** The apparatus of claim 11 wherein said force is a magnetic force.
- 15.** The apparatus of claim 14 wherein at a minimum magnitude, said magnetic force is slightly greater than the gravitational force.
- 16.** The apparatus of claim 14 wherein said magnetic force is generated by an interaction of a magnetic field that is generated by an energized coil with a magnetic field that is generated by a permanent magnet.
- 17.** The apparatus of claim 3 wherein said palpation module generates a magnetic force that opposes downward motion of said pseudo vein, and wherein said simulated stiffness of said pseudo vein is varied by changing a magnitude of said magnetic force.
- 18.** The apparatus of claim 4 wherein said pseudo vein yields to applied occlusion pressure, such that it moves downward, wherein downward movement is used as an indicator that an occlusion technique has been performed.
- 19.** The apparatus of claim 1 further comprising a skin-stretch module, wherein said skin-stretch module is disposed beneath said pseudo skin, and wherein said skin-stretch module measures an amount by which said user stretches said pseudo skin.

20. The apparatus of claim 2 further comprising a data processing system, wherein said palpation module generates a signal that is indicative of said change in position of said pseudo vein, and wherein said data processing system receives said signal.

21. An apparatus comprising:
a rigid housing;
a first opening in said housing; and
a palpation module, wherein said palpation module is disposed within said housing beneath said first opening, and wherein said palpation module enables a user to palpate a pseudo vein.

22. The apparatus of claim 21 further comprising pseudo skin, wherein said pseudo skin is disposed above said palpation module.

23. The apparatus of claim 22 wherein said pseudo skin obscures said pseudo vein from view of said user.

24. The apparatus of claim 21 further comprising:
a second opening in said housing; and
a skin-stretch module, wherein said skin-stretch module is disposed within said housing beneath said pseudo skin and beneath said second opening, and wherein said skin-stretch module measures an amount by which said user stretches said pseudo skin.

25. The apparatus of claim 21 further comprising a needle/catheter module, wherein a portion of said needle/catheter module is inserted into said housing during a simulated vascular-access procedure.

26. The apparatus of claim 21 further comprising an electronics/communications interface, wherein said electronics/communications interface is disposed within said housing, and wherein said electronics/communications interface electrically couples said palpation module to a data processing system.

27. An apparatus comprising a palpation module, wherein said palpation module comprises:

a pseudo vein; and
an arrangement for generating a first force, wherein said first force opposes a second force, wherein said second force is applied to said pseudo vein by a user.

28. The apparatus of claim 27 wherein said first force is magnetic.

29. The apparatus of claim 27 said first force is generated by the interaction of two magnetic fields.

30. The apparatus of claim 27 wherein said pseudo vein comprises a rigid member.

31. The apparatus of claim 27 wherein a magnitude of said first force is adjustable.

32. The apparatus of claim 27 wherein said palpation module further comprises:
a first plate, wherein said pseudo vein is disposed on said first plate, and wherein said first plate is movable toward a second plate; and
said second plate, wherein said second plate is disposed above said first plate in a fixed position, and wherein said second plate has an opening that is dimensioned and located to receive said pseudo vein.

33. The apparatus of claim 32 further comprising a sensor, wherein said sensor generates a signal that is indicative of a distance between said first plate and said second plate.

34. The apparatus of claim 27 further comprising pseudo skin, wherein said pseudo vein is disposed beneath said pseudo skin.

35. The apparatus of claim 34 wherein said pseudo skin visually obscures said pseudo vein.

36. The apparatus of claim 34 further comprising a housing, wherein said palpation module is disposed within said housing.

37. The apparatus of claim 36 wherein said housing comprises an opening, wherein said opening defines a palpation/occlusion region, and wherein said palpation module is disposed beneath said palpation/occlusion region.

38. An apparatus comprising a palpation module, wherein said palpation module enables a user to conduct a palpation procedure on a pseudo vein, wherein said pseudo vein is visually obscured by pseudo skin.